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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,419	12/19/2000	Andre C. Seznec	1662-25000JMH (POO-3078)	9553

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EXAMINER

PAN, DANIEL H

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/740,419

Applicant(s)

SEZNEC ET AL.

Examiner

Daniel Pan

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 11-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 5, 7-10, 16 and 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

1. Claims 1-23 remain for examination.
2. Claims 1-4,6,11-15,17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran (5,752,259 ) in view of Drako et al. (5,371,877).
3. No change has been made by applicant.
4. The rejections are maintained and incorporated by reference the last Office Action on 01/06/05.
5. The response filed on 04/06/05 by applicant has been fully considered but it is not persuasive.
6. In the remarks , applicant argued that :
  - a) Tran's prediction unit 37 is not described as comprising multiple banks;
  - b) the applicant's the multi-bank branch prediction array or multibank control logic is used to ensure two branch prediction accesses to said prediction array in the same cycle do not conflict.
7. As to the a) above, applicant only claimed a branch predictor "includes" a multi-bank prediction array (see claim 1, lines 5-7). No physical and functional structure of the branch predictor has been reflected into the claim. Therefore, any multi-bank array , or the like [cache 22], which had a functional connection with the branch prediction unit [prediction unit 37] could be an integral part of the prediction unit . Therefore, the prediction unit [37] and the prediction array (the cache 22) were together "a branch predictor". No specific structure of the branch predictor can be found in the claim.

Art Unit: 2183

Therefore, it is given the broadest interpretation, that is the branch predictor is the integration of a prediction unit [37] and the associated functional prediction array (the cache 22). Nowhere does applicant's claim recite that a prediction unit and a prediction array cannot be a combined integration to form a branch predictor.

8. As to the remarks regarding the feature of the multi-bank branch prediction array or multibank control logic...to ensure two branch prediction accesses to said prediction array in the same cycle do not conflict, Tran did disclose a bank control unit (prediction unit 37) to ensure that two accesses to the bank array do not conflict (see how the branch prediction unit was used with the memory banks to resolve the conflict in col.10, lines 2547, see col.12, lines 55-67, col.13, lines 142 for the detailed descriptions of the prediction unit 37, the addressing of different banks).

Applicant is reminded the following allowable limitations below :

9. Claims 5,16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the bank identifier for the conditional branch that was different than the bank identifier for a conditional branch that was last used. Tran disclosed bank identifier (bank0-bank7), but it did not teach the determination of the difference of the bank identifier of the last used to access the prediction array.

10. Claims 7-9 , 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the details of the comparison of the two bits value with the last used bank number.

11. Claims 10, 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the pair of the 4-1mux from the output of the single ported bank. Tran had a multiplexer (selector) , but it was neither a 4-1 mux nor a pair of 4-1 mux.

12. Claims 22,23 are allowable over the art of record. None of the prior art of . record teaches the combined features of the generation of the index from the conditional instruction address, the selection of two bits form the index, the comparison of the two bits with previous bank number determined by the conditional branch previously used to access the prediction array, the use of the two bits as current bank number if the previous bank number differs, and the change of the bank number if the previous bank number is equal for a conditional branch to access the prediction array .

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2183

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696, or the new number 571 272 4172. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712, or the new number 571 272 4162. The fax phone number for the organization where this application or proceeding is assigned is 703 306 5404.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 2183

you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

## ***21 Century Strategic Plan***



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